AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Page 14, before claim 1 at line 1, replace the single word heading CLAIMS with the following heading:

~~CLAIMS~~ WHAT IS CLAIMED IS:

1. (Currently Amended) Method for diagnosing operating states ~~(36,38,40,42)~~ of a synchronous pump in a liquid circuit, ~~particularly in a dishwasher or similar, characterised in that~~ comprising the following steps:

at least one measurement step which measures an ~~the~~ alternating voltage ~~(U)~~ applied to ~~the~~ a pump motor of the synchronous pump and ~~the~~ an alternating current ~~(I)~~ of the motor ~~are measured in at least one measurement step (30)~~ to provide recorded measured values, ~~in that the~~

a determination step which:

determines an extent of a phase shift ~~θ~~ between the alternating voltage ~~(U)~~ and the alternating current ~~(I) is measured~~ at at least one point in time ~~in a determination step (32)~~, ~~the phase shift θ or the chronological progression thereof being determined~~ from the recorded measured values, and

determines a characteristic of the phase shift ~~θ~~ or of its chronological progression ~~is determined~~, and ~~in that~~

an assignment step which assigns the determined characteristic ~~is assigned~~ to a predetermined pump operating state ~~(36,38,40,42)~~ in an assignment step ~~(34)~~.

2. (Currently Amended) The method of claim 1, wherein the assignment step includes the step of assigning ~~characterised in that~~ the extent of the phase shift ~~θ in the assignment step (34) is assigned~~ to a predetermined phase shift value range linked to a pump operating state ~~(36,38,40,42), particularly the "low water level" state~~.

3. (Currently Amended) The method of claim 1, wherein: ~~characterised in that in~~

the determination step ~~(32),~~ includes the step of determining the difference between the measured extent of the phase shift ~~(2)~~ and a saved predetermined phase shift ~~(1) is determined~~, and ~~in that in~~

the assignment step ~~(34),~~ includes the step of assigning said ~~the~~ difference in phase shift ~~determined in this way is assigned~~ to a predetermined pump operating state ~~(36,38,40,42)~~.

4. (Currently Amended) The method of claim 1, wherein ~~characterised in that in~~ the determination step ~~(32),~~ includes the steps of:

determining the extent of the phase shift ~~θ~~ between the alternating voltage ~~(U)~~ and the alternating current ~~(I) is determined~~ at different times,

determining the chronological progression of the phase shift ~~θ is determined~~ from the recorded measured values ~~and a characteristic of the chronological progression of phase shift θ is determined, and in that the determined characteristic is assigned to a predetermined pump operating state (36,38,40,42) in the assignment step (34)~~.

5. (Currently Amended) The method of claim 4, wherein ~~characterised in that in~~ the assignment step ~~(34),~~ includes the step of assigning the determined characteristic ~~is assigned~~ to a predetermined characteristic value range linked to a pump operating state ~~(36,38,40,42)~~.

6. (Currently Amended) The method of claim 5, wherein: ~~characterised in that in~~

the determination step ~~(32),~~ includes the step of determining the extent of the slope ~~(S1,S2)~~ of the chronological progression of the phase shift ~~θ is determined~~, and ~~in that in~~

the assignment step ~~(34),~~ includes the step of assigning the determined extent of slope ~~(S1,S2) is assigned~~ to a predetermined slope value range linked to a pump operating state ~~(36,38,40,42)~~.

7. (Currently Amended) The method of claim 4, wherein ~~characterised in that~~

the determination step ~~(32)~~ comprises a transformation step in which the chronological progression of the phase shift is subjected to a Fourier transform and the amplitude of the Fourier transform in a predetermined frequency range is determined, and ~~in that in~~

the following assignment step ~~(34),~~ includes the step of assigning the determined amplitude ~~is assigned~~ to a predetermined amplitude value range linked to a pump operating state ~~(36,38,40,42)~~.

8. (Currently Amended) The method of claim 7, wherein ~~characterised in that~~ the Fourier transform is one of the following:

a discrete Fourier transform (DFT) ~~or~~ and

a fast Fourier transform (FFT).

9. (Currently Amended) The method of claim 4, wherein ~~one of claims 4 to 8, characterised in that~~ the determination of the chronological progression of the phase shift in the determination step ~~(32)~~ includes the step of sliding averaging.

10. (Currently Amended) The method of claim 1, wherein ~~one of the preceding claims, characterised in that~~ the measurement step

~~(30)~~ includes a conversion of the measured alternating voltage signal ~~(U)~~ and of the measured alternating current signal ~~(I)~~ into rectangular signals ~~(U' I')~~.

11. (Currently Amended) Device for carrying out the method according to claim 1, said device comprising ~~one of the preceding claims, characterised by~~ a microcontroller ~~(10)~~ including: ~~with~~

a timer ~~(12)~~, ~~comprising~~

a voltage inlet ~~(14)~~ for recording a start signal, ~~and~~

a current inlet ~~(16)~~ for recording a stop signal, said voltage and current inlets ~~(14,16)~~ being ~~contrived~~ constructed to interpret ~~the~~ exceeding of a predetermined voltage or current signal level as a start or stop signal, with a content of the timer ~~content~~ being proportional to ~~the~~ a chronological gap between the start signal and stop signal, and ~~said microcontroller (10) also comprising~~

a memory ~~(18)~~ for saving the timer content.

12. (Currently Amended) The device of claim 11, wherein ~~characterised in that~~ the memory ~~(18)~~ comprises a number of memory cells to save a sequence of memory contents.

13. (Currently Amended) The device of claim 12, wherein ~~characterised in that~~ the microcontroller ~~(10)~~ comprises an evaluation unit ~~(20)~~ for averaging the memory contents.

14. (Currently Amended) The device of claim 11, further comprising ~~one of preceding claims 11 to 13, characterised by~~ an interface for transmitting operating state-related data to a control unit for controlling the liquid circuit.

15. (New) The method of claim 2, wherein the pump operating state is a low water level state.